Telephony Global

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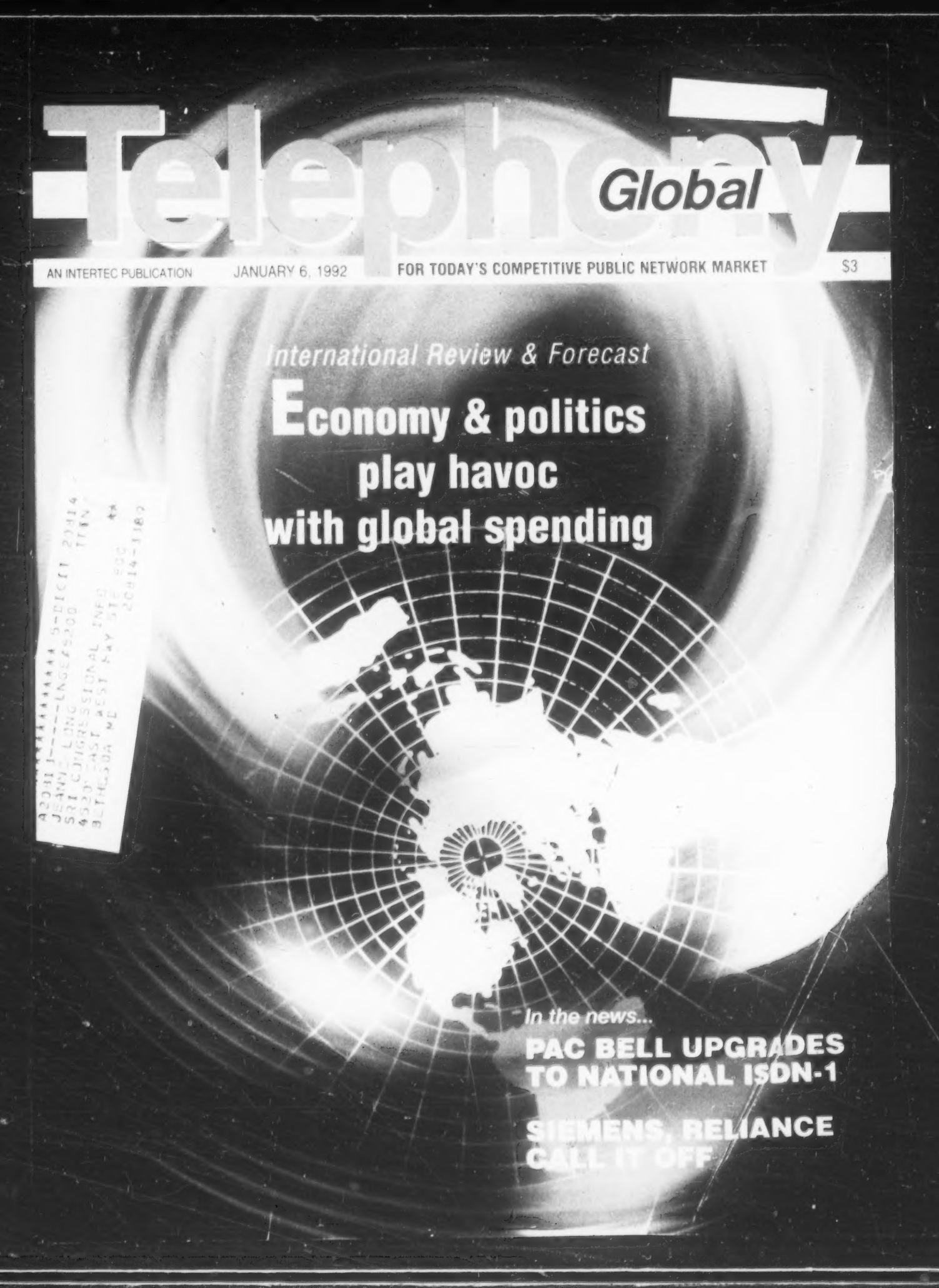
International Review & Forecast

Economy & politics play havoc with global spending



In the news...

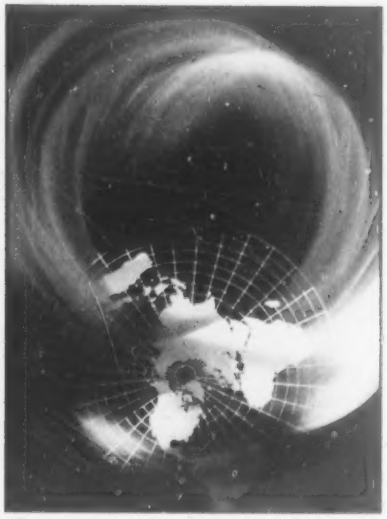
PAC BELL UPGRADES TO NATIONAL ISDN-1

SIEMENS, RELIANCE CALL IT OFF

MONDAY, JANUARY 6, 1992 Volume 222, No. 1

Telephony

FOR TODAY'S COMPETITIVE PUBLIC NETWORK MARKET



Overall spending by telcos has been swept downward due to the poor economy and uncertain political conditions around the world. Cellular providers, however, have largely escaped the storm. Cover artwork by Dominique Sarraute, The Image Bank

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Pacific Bell to upgrade 112 COs to National ISDN-1 standard

Richard Karpinski, Assistant Editor

Pacific Bell announced last week a major upgrade of most of its Northern Telecom DMS-100 switch base to the National ISDN-1 standard, beginning in late 1992.

Over the next six years, Pacific Bell will outfit 112 of its approximately 135 DMS-100s with National ISDN-1 upgrade modules. That will make standards-based integrated services digital network offerings available to about 2.5 million customers, or 15% of Pacific Bell's access lines, according to Wayne Purves, Pacific Bell product manager-ISDN.

Pacific Bell has not yet decided where it will deploy the upgrades, Purves said. However, customer demand for ISDN services should be the guiding force, he said. Pacific Bell sees the market for ISDN cutting across all market segments, including large- and small-business users and even residential customers, he added.

Pacific Bell also is negotiating with AT&T to upgrade its embedded 5ESS switches to National ISDN-1. The company hopes to have a deal signed with AT&T by the end of the first quarter, Purves said.

The National ISDN-1 standard, created by Bellcore and widely backed by industry carriers, switch makers and customer premises equipment vendors, promises to cure the problems associated with proprietary versions of ISDN. Problems such as service islands and a lack of terminal portability are generally acknowledged to have ground the progress of ISDN to almost a halt.

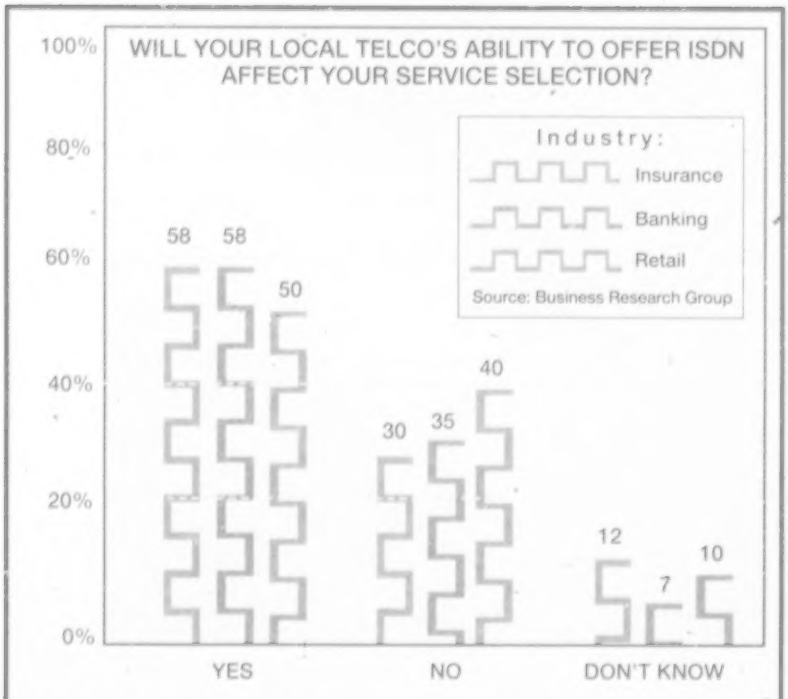
"We wanted to negotiate large-scale purchases of National ISDN-1 to make a statement," Purves said. "National ISDN-1 is the future of ISDN. We need to move to a fully standards-based platform. We want to get the platform in place and slowly but surely migrate our existing ISDN customers to National ISDN-1."

That attitude can be found at all the Bell regional holding companies, Purves said. In talking with his fellow ISDN product managers, Purves has found that "all of the regions are negotiating contracts of some form for the purchase and deployment of National ISDN-1."

Vendors too have noticed a large-scale commitment to ISDN. In addition to the Pacific Bell deal, Northern Telecom announced in November that it will install the industry's first National ISDN-1 software upgrade in March in a DMS SuperNode switch in a Bell Atlantic central office in Arlington, Va. National ISDN-1 capabilities were also important in Ameritech's recent $1-billion switch procurement, of which Northern Telecom won a 67% share, said a Northern Telecom spokesman.

"We think it's very encouraging," the spokesman said. "We're not even in 1992 yet and already three [RHCs] are making significant commitments to deploy National ISDN-1 in their networks."

Northern Telecom will begin the verification and testing process for National ISDN-1 in the first quarter, with general availability slated for July. AT&T's 5E8 software generic, which will include National ISDN-1, should be available in September, but a first office application should occur sometime before then, an AT&T spokesman said.



Of 100 business users surveyed, more than half said their local telephone company's ability to offer integrated services digital network would be critical to their selecting it as a local service provider. Insurance and banking industries were among the most interested in ISDN's potential. Complete survey results are detailed in Service Marketing Strategies: The Impact of ISDN, a new report from Business Research Group.

Siemens, Reliance break off talks

Steven Titch
News Editor

Siemens and Reliance Electric Co. have ended their acquisition courtship after Reliance grew uneasy with several conditions that the German conglomerate brought to the table.

Reliance, Lorain, Ohio, now says it will concentrate on its manufacturing business and is no longer for sale.

"We're off the market," said John Hudson, assistant treasurer for Re-

International Review and Forecast

Global economy, changing political scene play havoc with spending

CAROL WILSON, Editor

The critical role that telecommunications will play in the global economy has become a universal truth. Developed nations want a sophisticated telecom infrastructure to provide a competitive edge for their business interests. Developing nations need a basic telecom network to provide the foundation for economic growth.

Given these fundamental realities, construction budgets for public network carriers around the globe should be on a steady upward trend.

As this year's *Telephony* International Review and Forecast shows, however, there is no such certainty to global spending trends, a strong indication that planning for the economies of the future is being hampered by the uncertain economic and political present. Worldwide recession has affected demand for telecommunications services and, in areas where carriers are private entities, forced re-evaluation of spending plans.

In addition, the move toward privatization of government-owned PTTs and the introduction of competition into some aspects of former monopoly markets are adding to the impossibility of extrapolating a global trend from the jumble of individual market spending figures. Finally, among major carriers worldwide, there is a strong trend toward building a global market for multinational corporations and investing in public network carriers in developing nations. France

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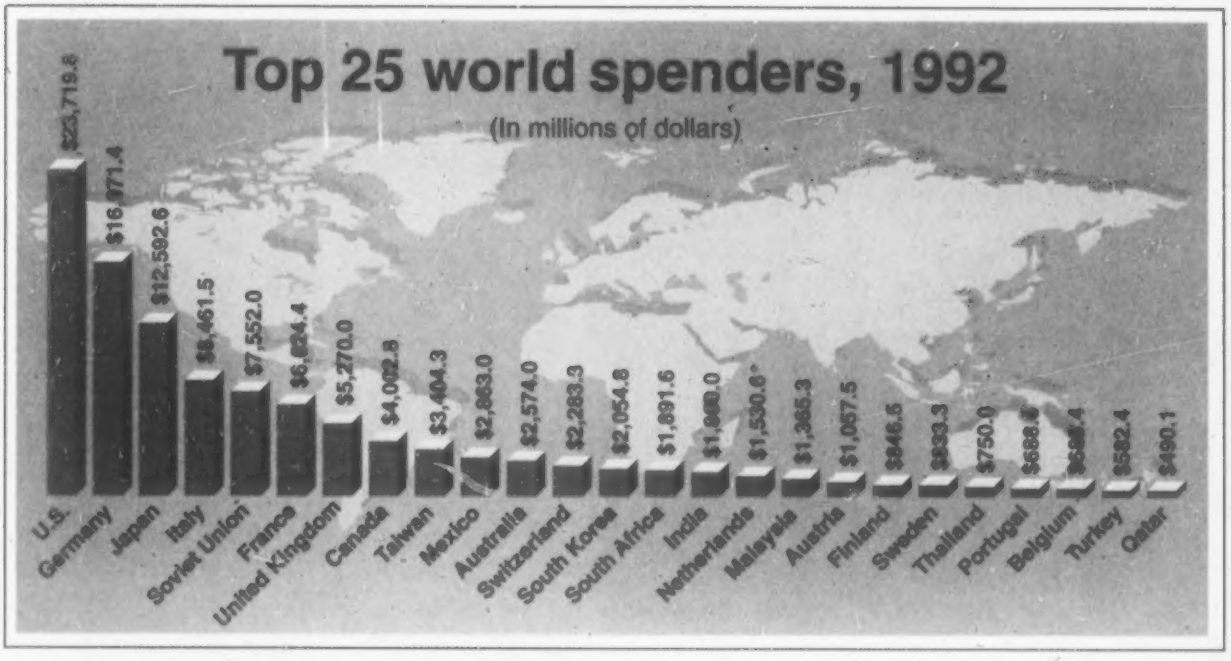

1991-92 WORLD SPENDING
($-in millions)

	1991	1992
Europe	**45,336.9**	**46,100.0**
Country		
Austria	1,053.1	1,057.5
Belgium	685.4	688.4
Cyprus	60.1	42.0
Denmark-Jydsk Tel	202.3	207.7
Finland	790.6	846.5
France	6,445.4	6,624.4
Germany	16,685.7	16,971.4
Iceland	26.1	36.2
Italy	8,461.5	8,461.5
Luxembourg	54.6	58.6
Netherlands	1,530.6	1,530.6
Norway	455.9	500.0
Portugal	596.8	688.6
Sweden	844.4	833.3
Switzerland	2,193.2	2,283.3
United Kingdom	5,251.2	5,270.0
North America	**29,738.3**	**30,642.6**
Country		
Bahamas	26.1	38.5
Bermuda	4.7	18.5
Canada	3,824.9	4,002.8
Mexico	2,529.0	2,863.0
U.S. -Regionals	14,479.0	14,993.2
-Independents	4,824.8	4,626.6
-IXCs	4,050.0	4,100.0

Source for all figures: International Telephony/Market Research

Telecom Spending *continued*

Telecom, Germany's Deutsche Bundespost Telekom, the U.K.'s BT (formerly British Telecom) and the seven Bell regional holding companies in the U.S. are all active players in this new investment game.

The only market that remains easy to forecast amid such uncertainties is cellular communications, which continues to boom worldwide. As cellular subscribership continues to grow, cellular carriers are expanding and improving their networks in virtually every market. This trend will continue in the coming year as cellular providers also build digital systems.

Some Boom Areas

In general spending, the greatest percentage increase is in the Far East/Pacific Rim region, where overall spending will rise almost 14% in 1992 (see page 25). The diversity of spending trends in the Pacific, however, illustrates three of the major global trends: substantial new investment by smaller countries such as Malaysia and Taiwan; the advent of competition in more mature markets such as Japan and Australia; and the globalization of carriers such as Singapore Telecom.

Competition is at hand for Nippon Telegraph and Telephone Corp. The Japanese giant is being forced to cut its costs to meet competitive pricing strategies, reducing its estimated construction budget by 16% in 1991. NTT has been able to use competition from vendors outside its own market—such as Northern Telecom, which is supplying its DMS-10 switch to NTT—to put pressure on major suppliers like NEC and Fujitsu to drive their prices down, says J. Michel Guite, vice president and telecommunications equipment analyst with Salomon Brothers in the U.S.

"NTT used to seek tailored technology built to its rigid specifications," he says. "But with the DMS-10, for example, they have seen that something that wasn't designed from the ground up for NTT could

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work. [NTT has] agreed to re-examine the need for detail in its specs and to move more toward international standards."

This move to standard equipment platforms, driven by customized software, is affecting other markets as well, as carriers such as France Telecom and Germany's Telekom move away "from old handicraft technology with cumbersome specs," says Guite. The common equipment platforms are areas in which vendors compete more heavily on price, giving carriers more value for their investment.

Competition is affecting the Australian market in a different way. Under a plan announced in November 1990 by the Australian government, Telecom Australia and OTC, the two existing monopoly carriers for local and long-distance service, respectively, are to be merged into one entity, and a second carrier will be created to provide competition.

Australia Telecom is preparing for that competition with investment in its infrastructure—its construction spending was up 15% in fiscal 1991. At the same time, a tight economy is holding down growth in revenues below historical levels and prompting tight spending controls, according to the company. Meanwhile, the country's new private-sector carrier, Optus, plans to spend $3.1 billion over the next six years to build its network.

Singapore Telecom expects to face privatization in the coming year and also has made substantial investment—$260 million, up 113%—to deploy digital technology and fiber optics in preparation for its new status. The company's major focus, however, is on the introduction of new national services and the globalization of its activities, through joint-venture companies, such as those already established in Thailand and in Sri Lanka, and through other strategic alliances the company hopes to form. Singapore Telecom has a construction budget of $3.7 billion for the next five years.

Western European PTTs also are preparing for competitive, privatized markets and the single European market by investing in their network infrastructure and by expanding into global markets. The construction budgets of Western Europe rose 9% to $45.3 billion, paced by a 30% increase in spending by Telekom, which is rebuilding the former East Ger-

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Cellular subscribers outside Europe, 1991

North America

Canada	628,000
Caribbean	7,500
Mexico	150,000
U.S.	7,200,000

Africa & North Africa

Algeria	2,300
Mauritius	750
Morocco	1,000
South Africa	9,000
Tunisia	1,200

South & Central America

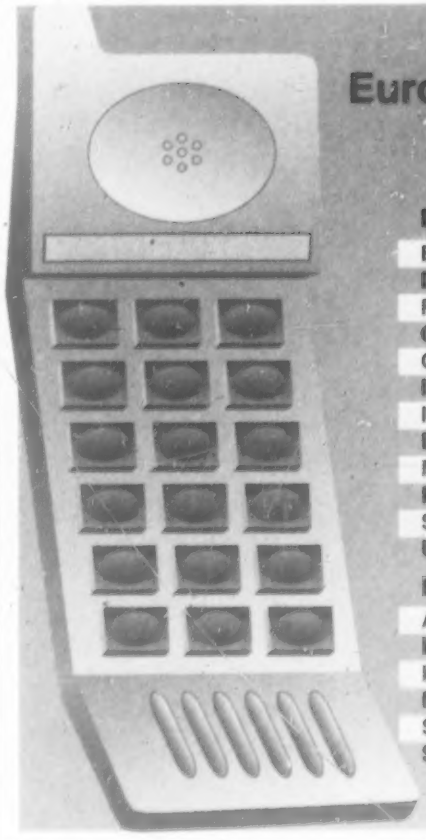
Argentina	25,600
Brazil	5,000
Chile	26,000
Costa Rica	1,400
Guatemala	900
Peru	5,000
Venezuela	8,100

Middle East & South Asia

Bahrain	5,300
Egypt	4,500
Israel	22,300
Jordan	1,500
Kuwait	20,000
Oman	3,700
Pakistan	6,000
Saudi Arabia	22,300
Sri Lanka	1,600
Turkey	47,500
United Arab Emirates	28,900

Far East & Pacific

Australia	320,500
Brunei	4,000
China	39,100
Hong Kong	158,000
Indonesia	15,500
Japan	1,887,000
Macao	3,200
Malaysia	123,200
New Zealand	73,200
Philippines	35,900
Singapore	65,500
South Korea	161,200
Taiwan	176,000
Thailand	124,300



European Commission (EC) and European Free Trade Association (EFTA) cellular subscribers

(In thousands)

EC	1988	1989	1990	1991	1995*
Belgium	19	31	42	54	125
Denmark	100	126	150	176	270
France	110	189	295	375	1,100
Germany	96	157	275	555	2,000
Greece	0	0	0	0	15
Ireland	7	14	25	32	75
Italy	31	61	266	536	1,346
Luxembourg	1	1	1	1	2
Netherlands	36	59	80	119	320
Portugal	2	5	7	13	45
Spain	11	28	55	110	615
U.K.	480	802	1,155	1,238	1,900
EFTA					
Austria	30	48	72	117	245
Finland	103	156	225	292	385
Iceland	4	7	10	13	28
Norway	151	173	205	235	315
Sweden	239	340	485	594	695
Switzerland	43	83	128	178	330

*Estimate

Note: Liechtenstein is also a member of EFTA. No reported figures are available for Liechtenstein.

Telecom Spending *continued*

many's telephone network, and more modest increases in Italy, Spain and Portugal.

For the future, Germany's Telecom 2000 program to upgrade the telecommunications infrastructure in the east of the country envisages the expenditure of $35 billion to support 7.2 million new telephone lines, 68,000 pay phones, 360,000 fax machines, 50,000 packet data connections, 5 million cable TV subscribers and 300,000 mobile users. Italy plans to invest almost $9 billion annually in the period to 1995 to overhaul its antiquated telecommunications infrastructure.

Western European PTTs also are preparing for competitive, privatized markets and the single European market by investing in their network infrastructure and by expanding into global markets.

In addition, major European carriers such as France Telecom and BT are expanding into global markets. France Telecom celebrated its new status, effective Jan. 1, 1991, as a state-owned independent carrier by actively pursuing alliances and partnerships abroad. Currently it has a presence in 15 companies, including part ownership of networks in Argentina and Mexico, where it joined with Southwestern Bell and others to buy a major stake in Telmex.

Within Europe, France Telecom is focusing on one-stop shopping and billing agreements, mobile communications and the interconnection of the integrated services digital network and videotex networks.

Outside Europe, France Telecom has entered into agreements with other carriers to meet the needs of international corporations through interconnection of networks and network management capabilities, according to a statement from the company.

BT created its Syncordia subsidiary in September 1991 to provide data, voice and image communication services to multinational corporations. Originally conceived as a consortium, Syncordia is still expected to include Telekom and NTT. Negotiations with the two carriers are still

under way, according to Syncordia officials.

BT rival Cable & Wireless, already present in a number of key international markets, is looking to beef up its profile in the U.S. and Eastern Europe. At home, the group's Mercury subsidiary is expected to invest another $1.8 billion in its network by 1993. There is some speculation that C&W could float Mercury off as a separate entity or take an equity partner to help fund this expansion.

The European picture was further brightened by the opening of Eastern European markets in former Communist nations now eagerly embracing capitalism and free enterprise. As expected, countries with the strongest geographical and historical ties to the West led the way. For instance, U S West's cellular joint venture with the Hungarian PTT signed up 4000 subscribers in the first three months of operation, far exceeding expectations. The initial success of joint venture company Westel Radiotelefon Kft. has spurred further investment and growth of the system.

U S West, along with Bell Atlantic and the Czech PTT, cut over cellular systems in Prague in mid-September. The two RHCs are also working with both the Czech and Slovakian PTTs, not only on cellular, but on a digital overlay network with an eye toward extending modern high-speed voice and data services to the states that make up the country.

And, after a drawn out bidding process, the Polish government awarded the national cellular franchise to the Ameritech/France Telecom partnership. Ameritech, which in 1990 lost out on a cellular bid in Germany, had aggressively pursued Poland. At one point, the company was successful in overturning an earlier bid that had been granted to a consortium of Polish companies.

1991-92 WORLD SPENDING ($-in millions)

	1991	1992
South & Central America	**1,103.6**	**1,335.1**
Country		
Argentina	248.0	245.5
Brazil	468.8	389.4
Chile	42.1	58.2
Colombia	198.8	496.3
Costa Rica	29.3	28.1
El Salvador	22.9	23.5
Panama	45.3	46.1
Peru	NA	NA
Venezuela	48.4	48.0
Africa	**1,847.3**	**2,460.5**
Country		
Gambia	32.1	32.1
South Africa	1,400.0	1,891.6
Zimbabwe	415.2	536.8

1991-92 WORLD SPENDING ($-in millions)

	1991	1992
Far East & Pacific	**20,966.0**	**23,848.5**
Country		
Australia	2,655.3	2,574.0
Hong Kong	216.6	229.0
Japan	12,592.6	12,592.6
Malaysia	701.1	1,365.3
New Zealand	348.0	348.0
Philippines	86.2	191.1
Singapore	259.5	339.4
South Korea	2,054.8	2,054.8
Taiwan	1,624.7	3,404.3
Thailand	427.2	750.0
Middle East & Southern Asia	**3,636.2**	**3,736.8**
Country		
Bahrain	54.8	54.8
Egypt	69.9	71.4
India	1,800.0	1,800.0
Israel	411.5	411.2
Jordan	6.7	12.1
Nepal	16.4	16.4
Oman	78.0	78.0
Qatar	490.1	490.1
Syria	111.4	111.4
Turkey	488.4	582.4
United Arab Emirates	109.0	109.0

In contrast to the heavy activity in these three countries, the instability of Romania, the civil war in Yugoslavia and the more entrenched socialist regimes in Bulgaria and Albania have kept investment away.

In the disintegrating Soviet Union, however, business proceeds in spite of the political upheaval that makes daily news there. AT&T continues to open more circuits into the country. In October, AT&T cut over a gateway switch in Armenia. After the August coup, AT&T successfully pressed the U.S. government to allow it to use the Intersputnik circuits for which the carrier had negotiated several years ago.

RHCs, PTTs and manufacturers all say that since the coup, authority has transferred to republic-level governments. Manufacturing and infrastructure agreements continue to be reached, especially with enterprises in Russia, Byelorussia and the Ukraine, as well as the newly independent Baltic states, but Western companies still say the success and prof-

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itability of these ventures depend ultimately on how the economy shakes out.

South America has been an area of significant activity, although a true measure of the market there is difficult to get, given the effect inflation, currency devaluations and changes have had on the economies of the area. A number of South American nations, including Argentina, Venezuela, Chile and Brazil, are looking at major improvements in their telecommunications infrastructure.

Just to the north, Mexico logged a 63% increase in construction spending by Telmex, buoying the otherwise sluggish North American market. Construction spending by local exchange carriers in the United States, the world's largest single market, fell to $19.3 billion *(Telephony, Dec. 16, 1991, page 16)*.

The U.S. market has been plagued by uncertainty, and it is reflected in the spending of LECs. The RHCs, which represent the vast majority of the U.S. market, saw spending decrease by almost 2%. Independent telephone companies, representing the rest of the market, cut construction spending by 3%.

Key factors affecting the U.S. market include a weak economy, which has driven down demand for new services and access line growth, and regulatory and technological questions. U.S. carriers are waiting for action by the federal government on issues including whether phone companies will be allowed to provide video entertainment services to the home, and whether the Bell companies will be allowed to manufacture equipment and provide information services and long-distance telephone service.

In addition, U.S. carriers, like many of their international counterparts, are waiting for finalization of standards for new technology such as the synchronous optical network before moving ahead with deployment.

"The Bell companies must have a more comfortable environment in which to spend," says Steve Sazegari, telecommunications analyst with Dataquest, San Jose, Calif. "Right now there are many uncertainties in the regulatory arena, in the standards arena and in the technology arena. For the RHCs to overcome this will take time. Setting aside the economy for a moment, I think we see some movement toward more expenditures in the 1994-95 time frame, especially with standards and regulatory problems clearing up."

Mobile Communications

The boom in mobile communications worldwide is well-documented and has reached markets as diverse as Thailand and Italy. In the former, capacity of analog cellular systems was expected to grow from 70,000 to 200,000 over the past year, and to reach 290,000 in the next year, when initial digital service will be launched. In Italy, the total number of subscribers for mobile phones and pagers jumped from 119,000 to 346,000 in 1990, with 200,000 of those new subscribers buying mobile voice service. A significant increase in price for access to mobile services was expected to slow that demand in 1991.

In the European Economic Community market, cellular subscribership is expected to grow 36% to 3.2 million this year and 143% over the next four years to reach nearly 8 million by 1995.

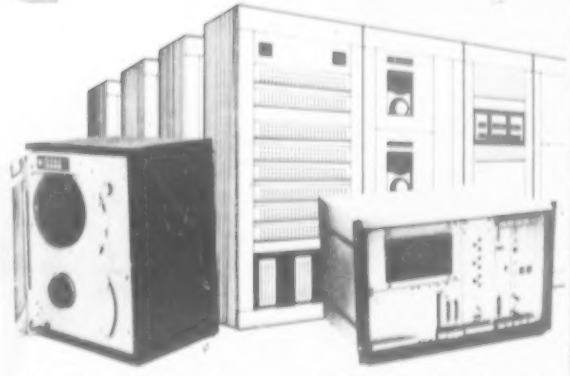
Investment in cellular networks is taking on a new dimension with the conversion to digital technology. In Europe, Australia and parts of the Middle and Far East, this involves deployment of GSM (global system for mobile communications), a technology that will create a single standard to ultimately replace the jumble of analog mobile systems. Although GSM went on the air officially in July 1991 in limited areas, the complexity of the standard and a lack of GSM terminals has slowed genuine commercial operations. That picture is expected to change in the coming year, fueling more spending by the cellular carriers.

The U.K.'s PA Consultancy Group Ltd. forecasts a GSM subscriber population of 3 million by 1995, rising to 14 million by the end of the decade. Personal communication networks, presently being built in the U.K. and expected to get the green light in Germany in early 1992, will boost cellular telephone customer base.

In the U.S., the digital cellular picture is less clear. While the majority of U.S. carriers are ready to press ahead with implementation of one digital standard, known as time division multiple access, a minority group still backs a different set of standards, known as code division multiple access. It is not yet certain how this difference of opinion will affect digital system deployment by U.S. carriers. ■

INNOVATIVE DATA TECHNOLOGY

THE INTERNATIONAL STANDARD FOR DATA INTERCHANGE



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